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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
AKIHIKO FUJII, ET AL. : EXAMINER: KING, FELICIA C.  
SERIAL NO: 10/586,609 :  
FILED: JULY 19, 2006 : GROUP ART UNIT: 1784  
FOR: COFFEE DRINK COMPOSITION :

REPLY BRIEF

SIR:

The following is a reply to the examiner's answer of September 2, 2010 to appellants' appeal of June 17, 2010 of the examiner's final rejection of December 30, 2009 of claims 1-17 as obvious.

HHQ is present in coffee at a concentration exceeding 0.1 wt. % based on an amount of chlorogenic acids (paragraphs [0022] and [0040] of appellants' specification).

HHQ has an HPLC relative retention time of from 0.54 to 0.61 with respect to gallic acid (paragraphs [0023] of appellants' specification).

An HHQ content in coffee may be reduced while retaining a chlorogenic acid content by treating with an adsorbent (paragraph [0021] of appellants' specification).

The HHQ content of the filtered coffee composition of Stelkens was 0.24 wt. % based on chlorogenic acids, an amount in excess of the claimed upper limit of less than 0.1 wt. %. The composition demonstrated an HPLC peak indicative of the presence of HHQ (Ohminami declaration April 24, 2009).

The HHQ content of the filtered coffee composition of Sosuke was determined as 0.76 wt.% and 0.67 wt. % wt. % based on chlorogenic acids, each amount in excess of the claimed upper limit of less than 0.1 wt. %. Each composition demonstrated an HPLC peak indicative of the presence of HHQ (Ohminami declaration September 23, 2009).

The HHQ content of a filtered coffee composition using the technique disclosed in Stelkens and the activated carbon disclosed in Sosuke was 0.44 wt. % wt. % based on chlorogenic acids, an amount in excess of the claimed upper limit of less than 0.1 wt. %. The composition demonstrated an HPLC peak indicative of the presence of HHQ (Ohminami declaration March 8, 2010).

*No Evidence That HHQ Is A Poisonous Substance*

The evidence relied upon by the examiner is stated in section (8) of the examiner's answer and consists only of Slaga U.S. 2004/0005398, Stelkens GB 354,942, Suzuki EP 1186294, Schlichter U.S. 3,615,666, Behrman U.S. 2,430,663, Kiefer U.S. 5,558,742 and Sosuke JP 6-315434. None of these references identify HHQ as a poisonous substance. None of these references provide motivation to remove HHQ.

Page 4 of the examiner's answer concedes that Stelkens and Sosuke **fail to specifically recite the removal of HHQ**. These two reference do not identify HHQ as a poisonous substance. These are the only two references relied upon by the examiner as to the HHQ content (page 11, paragraph 13 of examiner's answer). Stelkens only discloses removal of **poisonous substances** such as caffeine and roasting poisons (page 1, lines 19-26). Removal of

caffeine and roasting poisons fails to suggest removal of HHQ. Sosuke only discloses removal of polymeric brownish black ingredients through an activated carbon filter (see abstract). Removal of polymeric black ingredients fails to suggest removal of HHQ.

Slaga has merely been cited for disclosing a chlorogenic acid containing composition. Slaga identifies “bad compounds” generated in conventional roasting processes as 4-aminobiphenyl, 2-amino-1-methyl-6-phenylimidazol[4,5-b]pyridine and glyoxal. None of these “bad compounds” would even suggest removal of HHQ.

Suzuki discloses chlorogenic acids for the prevention and reduction of the severity of hypertension. There is no disclosure or suggestion that HHQ is a poisonous substance.

Schlichter and Behrman fail to identify HHQ as a poisonous substance. Schlichter only describes a soluble coffee composition and fails to disclose HHQ as a poisonous substance. Behrman only discloses packaging for roasted freshly ground coffee and fails to disclose HHQ as a poisonous substance (column 1, lines 14-17)

Kiefer has been cited as evidence of labeling products but fails to disclose HHQ as a poisonous substance.

Thus, the question becomes why would one be motivated to remove HHQ when HHQ is not identified as a poisonous substance? There is no evidence of record that HHQ is a poisonous substance and thus, there is no motivation.

The examiner assert that HHQ is a poisonous substance in that it has “toxic effects on the body such as the cleavage on DNA strands” (page 11 of examiner’s answer). However, the examiner’s assertion is not supported by any evidence of record. There is no disclosure in any

of the seven cited references that HHQ is a poisonous substance. In the absence of any indication that HHQ is a poisonous substance there is no motivation to remove HHQ to a concentration of 0.1 wt. % based on the amount of chlorogenic acids. The relied upon references are devoid of any evidence of the examiner's assertion. Her baseless assertion constitutes reversible error.

*The Examiner Has Misinterpreted The Evidence Of Insufficient HHQ Removal*

The claimed HHQ content does not inherently arise from using the combined techniques described in the art.

Appellants have provided the examiner with evidence of the inherent level of HHQ based on the amount of chlorogenic acids resulting from her suggested combination of references.

The Ohminami declaration of April 24, 2009 reported the HHQ content by processing coffee according the technique disclosed in Stelkens. The content of HHQ was 0.24 wt. % based on chlorogenic acids. Page 10 of the examiner's erroneously calculated this ratio as 0.0024 when the ratio is really 0.24 wt. % ( $0.00112 \text{ wt. \% HHQ} / 0.46549 \text{ wt. \% chlorogenic acids} \times 100\% = 0.24 \text{ wt.\%}$ ). Thus, while the chlorogenic acid content falls within the claimed range, the HHQ is not sufficiently removed by the technique of Stelkens such that the HHQ/chlorogenic acid ratio exceeds the claimed range.

The Ohminami declaration of September 23, 2009 reported the HHQ content by processing coffee according to the technique disclosed in Sosuke JP '434. The content of HHQ

was 0.76 wt.% and 0.67 wt. % wt. % based on chlorogenic acids respectively depending on the amount of carbon used.

The Ohminami declaration of March 8, 2010 reported the HHQ content by processing coffee according the technique disclosed in Stelkens using an activated carbon as disclosed in Sosuke JP '434. The content of HHQ was 0.44 wt. % wt. % based on chlorogenic acids.

Accordingly, the claimed coffee composition containing 0.1 wt. % HHQ based on the amount of chlorogenic acids is not obvious.

On page 10 of the examiner's answer, the examiner asserts that appellants' have only provided evidence of an expected result as to the level of extraction of HHQ. The examiner reasons that the evidence of increased HHQ removal when treatment is conducted at 5 minutes verses only 3 minutes is evidence of an expected result.

In spite of the fact that the declarations of Mr. Ohminami are not prior art and therefore are not evidence of what would have been expected, the conditions used in the three Ohminami declarations were dictated by the conditions recited in Stelkens and Sosuke. The declarations can not be directly compared as evidence of effect of the sole variable of time. More specifically, the Ohminami declarations of April 24, 2009 and March 9, 2010 were conducted according to the process disclosed in Stelkens in which a mass of ground coffee and activated carbon adsorbent were contacted with boiling water for 5 minutes followed by filtration. Coffee grounds and adsorbent are simultaneously contacted with water. The Ohminami declaration of September 23, 2009 was conducted according to the process disclosed in Sosuke in which a coffee extract was passed through an activated carbon adsorbent over the course of

3 minutes. Ground coffee and adsorbent are not simultaneously in contact with water. Thus, it is not possible to use these three experiments as evidence of higher levels of extraction of HHQ using a longer extraction time as the processing conditions are so vastly different.

Moreover, the examiner has misunderstood the argument.

Appellants submitted evidence of the lack of inherency of the HHQ content of the reference compositions. Even though the rejection is based on obviousness, appellants have demonstrated that following the disclosure of the art, an HHQ level as claimed is not inherently produced.

Such evidence is not based on any concession that there would have been motivation to remove HHQ, but rather only that when practicing the methods of the cited references, an HHQ content as claimed does not inherently flow.

The examiner's rejection is based on the flawed logic that there is motivation to remove HHQ because it is recognized as a poisonous substance. The arguments above make evident the examiner's error. In the absence of identification of HHQ as a poisonous substance, there would be no way to even identify a "desired amount" of HHQ (page 10 of examiner's answer). Further, lacking any guidance as to removal of HHQ, due to the complex composition of coffee, there would have been no general motivation to treat a coffee composition with an adsorbent under conditions which would yield an HHQ content of 0.1 wt. % based on the amount of chlorogenic acids.

Finally, as the claims are directed to a coffee composition having a ratio of HHQ/chlorogenic acid, the examiner has failed to acknowledge the nonobviousness of reducing the HHQ content while not substantially reducing the chlorogenic acid content.

Thus, the examiner has erroneously interpreted the **evidence** of the lack of insufficient HHQ removal to achieve the claimed content using 1) the technique of Stelkens, 2) the technique of Sosuke JP '434 and 3) the technique of Stelkens with the activated carbon of Sosuke JP '434.

Since none of the techniques cited by the examiner inherently produce an HHQ content as claimed and HHQ is not identified as a poisonous substance, the examiner's conclusion as to the obviousness of the claimed HHQ content relative to chlorogenic acid is in error and her decision must be reversed.

Respectfully submitted,

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